THE NATIONAL CENTER FOR BIOMEDICAL ONTOLOGY

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The National Center for Biomedical Ontology is developing tools and methods for assimilating, archiving, and accessing machine-processable representations of biomedical domain objects, processes, and relations to assist in the management, integration, visualization, analysis, and interpretation of the huge, distributed data sets that are now the hallmark of biomedical research. Our Center is national in scope, with participation of leading scientific groups from Stanford, Lawrence Berkeley National Laboratory, the Mayo Clinic, SUNY Buffalo, and the University of Victoria.

Our objectives are defined by the following seven cores: (1) the development of computer science methods for ontology annotation, peer review, alignment, mapping, and management, leading to the creation of a virtual library of Open Biomedical Ontologies and a Web-based BioPortal to allow investigators and intelligent computer programs to access and use the ontology library; (2) the creation of tools to assist biomedical investigators in the use of ontologies accessible through BioPortal to annotate experimental data; to enable scientists to visualize, apply, and store their data and annotations in an online resource also accessible via BioPortal known as Open Biomedical Databases; to ensure that data annotations will change as the underlying ontologies evolve over time; and to facilitate cross-linking among ontologies and data accessed via BioPortal; (3) the promotion of driving biological projects—initially in the areas of (a) interpretation of genomic data in Drosophila (Cambridge, UK); (b) interpretation of genomic data in zebrafish (U. of Oregon); (c) analysis of clinical-trial data for therapy of HIV/AIDS (UCSF)—that can stimulate our research by highlighting the need to use ontologies for data analysis and data annotation; (4) the creation of a computational infrastructure to support our research, development, and dissemination activities; (5) the training of the next generation of biocomputational scientists in the area of biomedical ontology; (6) a set of comprehensive dissemination activities that include the creation of a novel program of workshops led by world-class faculty to assist the biomedical community to create and refine ontologies and to use the Center's technologies to enhance biomedical investigation; and (7) outstanding project administration conducted by a dedicated and talented management group.

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